

SUBCON SUBGROUP FY99 ANNUAL REPORT **TO THE STCG MANAGEMENT COUNCIL**

December 7, 1999

During FY99, the Subcon Subgroup had the following accomplishments, listed below the related STCG Mission Statement elements.

MISSION STATEMENT - Element 1

Function by involving user organizations (both DOE and the contractors), technology providers, regulators, American Indian Tribes, and stakeholders, and promoting broad information exchange among all interested parties. Maintain a helpful attitude and serve as a conscience for technology improvement at Hanford. Contribute to DOE-wide communications and lessons learned.

Membership Changes

- Arlene Tortoso became the Subgroup Lead after Fred Serier was transferred to another Division.
- Jim Hanson replaced Dave Biancosino as the DOE-RL/Science and Technology Programs representative.
- Scott Petersen replaced John April as the BHI representative.
- Gordon Rogers joined the Subgroup as our HAB representative.
- Jerry White went part-time and Abdul Dada assumed Jerry's management responsibilities. Jerry will still be attending Subgroup meetings.

Subcon Subgroup Accomplishments

- The Subgroup invited presentations by ER project staff on the cleanup strategies they are planning to pursue (N-Springs ITRD Project, Carbon Tetrachloride ITRD Project, Tank Farm Interim Surface Barriers ITRD Project, ISRM ASTD Project, Enhanced Site Characterization ASTD Project, and the 200-BP-1 Surface Barrier Treatability Test).
- Discussed STCG impacts on the projects. The Groundwater Program is now looking for new technologies. The Remedial Action Program is looking for new characterization technologies. The current remediation philosophy is to "dig it up and move it to ERDF". In the past, there was significant distrust of EM-50 due to the fact that their method of operation was "big technology push" and they couldn't be counted on for funding. We are seeing a shift now (e.g., In Situ Redox Manipulation), but progress is slow. Burial

ground remediation may be an opportunity for finding new technologies.

- The Subgroup developed the following definitions of success:
 - ✓ Accomplishing the goals stated in our FY99 Work Plan.
 - ✓ Consistent participation by all parties.
 - ✓ Promotion of applicable and acceptable technologies/solutions to meet Hanford cleanup goals.
 - ✓ Mechanism to help projects identify/evaluate/incorporate alternative technologies into their baseline.
 - ✓ Being a catalyst to help make better use of technology at Hanford.
 - ✓ Helping to bring additional resources to Hanford for technology activities.
 - ✓ Being informed, reaching agreement/consensus, and providing support to the Hanford projects.
 - ✓ Communication, insights, and an opportunity to take ownership of technology decisions.
 - ✓ Being interfaces with our individual organizations to bring information back and forth.
 - ✓ Airing, discussing, and resolving technology issues early in the technology lifecycle.
 - ✓ Having a positive impact on a Hanford project (i.e., technology is making a difference).

MISSION STATEMENT - Element 2

Identify, prioritize using systems analysis, and seek consensus on Hanford Site and program-specific problems, science and technology needs, and requirements. Recognize baseline schedule insertion points for technology. Focus on the baseline, but also identify technologies to support potential baseline alternatives if they offer risk reduction benefits or high financial return on investment by improvements in environmental, safety, or health protection. Devote 20% of the STCG effort to science needs and 80% to technology needs and deployment.

Subcon Subgroup Accomplishments

- Reviewed and endorsed the 39 FY 2000 science needs that were submitted to the Environmental Management Science Program (EMSP).
- Reviewed and endorsed the 15 FY 2000 technology needs that were submitted to the Subsurface Contaminants Focus Area (SCFA).
- Participated in Groundwater/Vadose Zone S&T Needs Workshop.
- Reviewed and endorsed new Vadose Zone Technology Needs for submittal to SCFA.
- Instituted a process for reviewing the status of two or three of our S&T needs at each meeting.
- Reviewed existing Technology Insertion Points (TIPs).
- Heard status reports on the following EMSP projects: 1) Molecular-Level Processes Governing the Interaction of Contaminants with Iron and Manganese Oxides, 2) Genetic Analysis of Stress Responses in Soil Bacteria for Enhanced Bioremediation, 3) Cesium Migration in the Vadose Zone, and 4) Transport of Saline Tank Wastes Through the Vadose Zone.

MISSION STATEMENT - Element 3

Be a forum for assessing and recommending potential technologies for application at Hanford. Look for technologies that provide improved endstates, effectiveness, improved schedules, or improved costs in accomplishing the required results. Also look for technologies to reduce surveillance and maintenance costs while maintaining safe operations. Focus on life-cycle costs and benefits; improvements in environmental, safety, or health protection; and improvements in performance, pollution prevention, and waste minimization relative to alternative remedies. Make appropriate referrals for vendors (e.g., to DOE or the contractors).

Subcon Subgroup Accomplishments

- Reviewed progress of our two ASTD projects: In Situ Redox Manipulation for Groundwater Remediation in the 100-D Area and Enhanced Site Characterization System.
- Participated in workshops and conference calls on our three ITRD projects: the N-Springs Sr-90 Project, the Carbon Tetrachloride Project, and the Tank Farms Interim Surface Barriers Project.
- Reviewed and endorsed PNNL's NABIR Field Research Center proposal for submittal to DOE's Office of Biological and Environmental Research. This was a 10-year program at \$3 million per year to develop an understanding of the biological and biogeochemical

processes that contribute to bioremediation of DOE's metals- and radionuclide-contaminated sites.

- Listened to presentations on innovative technologies for characterization and remediation of soil and groundwater problems at Hanford (Horizontal Drilling in the 200 Area, In Situ Gaseous Reduction, Groundwater, Contaminant Transport Modeling, Sr-90 Removal from the 100-N Area Groundwater, and Hanford Site Remediation with Six-Phase Heating).
- Provided feedback to the SCFA representatives when they visited Hanford in February 1999 in order to: 1) obtain greater funding support for our urgent needs, 2) address any questions they had about our needs, and 3) thank them for their continuing support.

MISSION STATEMENT - Element 4

Champion and facilitate demonstration and deployment of innovative, modified, or existing technologies that are new to Hanford and share information with other sites to best leverage all available resources.

Subcon Subgroup Accomplishments

- Continued to evaluate the performance of the In Situ Redox Manipulation (ISRM) technology demonstration, and heard an invited presentation on the ISRM Reoxygenation Study.
- Continue to follow the ITRD project activities related to the strontium plume at N-Springs and the carbon tetrachloride plume in the 200 Area.
- Actively pursued potential demonstration/deployment of technologies to address Hanford groundwater and vadose zone contamination problems (In Situ Redox Manipulation, In Situ Gaseous Reduction, Sonic Cone Penetrometer, and Smart Sampling Technology).
- Reviewed and endorsed deployment of In Situ Gaseous Reduction at Hanford.

MISSION STATEMENT - Element 5

Foster market pull from the DOE-RL and contractor line project customers and eliminate barriers (e.g., "not invented here", resistance to change).

Subcon Subgroup Accomplishments

- Reviewed existing Technology Insertion Points (TIPs) to be included in the Multi-Year Work Plans (MYWPs).
- BHI Technology Applications staff worked with the ER projects to determine what they should be working on and which problems to address. “Technology Agr made with the projects on what the priorities are. BHI Technology Applications has been successful in getting the projects interested in using technology (e.g., Small-Diameter Geophysical Logging System and Smart Sampling).
- BHI Technology Applications is managing the S&T needs process to make it more effective. They crosswalked all the needs with the projects. Then they got all the projects more involved in the needs process to make sure we have the right needs.

MISSION STATEMENT - Element 6

Promote competitive privatization and commercialization by communicating information on Hanford's science and technology needs and schedule insertion points, as well as demonstration and deployment opportunities, to commercial technology providers. Help break barriers to involvement by companies new to Hanford.

Subcon Subgroup Accomplishments

- The ER Project maintained the Technology Application homepage to broadly communicate the Subcon technology needs (www.bhi-erc.com/technology/tech.htm).
- The Subgroup identified and eliminated barriers to deploying technologies in the field (e.g., ITRD, In Situ Gaseous Reduction).

MISSION STATEMENT - Element 7

Provide input to decision-makers (e.g., DOE-RL, DOE-HQ, Congress, regulatory agencies) on Hanford's highest-priority science and technology needs to ensure critical needs are funded. Also, provide feedback to them on the Site's accomplishments.

Subcon Subgroup Accomplishments

- Members participated in the SCFA Mid-Year Review in May 1999. Also, weekly conference calls were held with SCFA to maintain good communications.
- Members went to SCFA in August 1999 to discuss what Hanford did with its FY99 funding, plans for FY 2000, our S&T needs, and budget projections.

- SCFA representatives visited Hanford in October 1999 to continue the dialogue on our S&T needs and their responses.
- Maintained a dialogue with SCFA, private vendors, and other technology providers on how our high-priority technology needs are being addressed.
- BHI Technology Applications responded to about 100 vendor contacts regarding the Subcon technology needs. They also evaluated 78 alternative technologies.
- Prepared the Subcon Subgroup FY98 Annual Report to the STCG Management Council and the FY99 Subcon Subgroup Work Plan.